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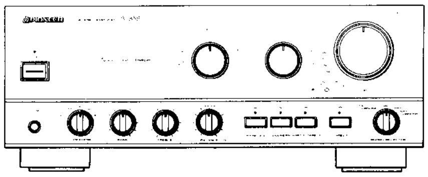
Service Manual



ORDER NO.
ARP1815

STEREO AMPLIFIER

A-858

- This manual is applicable to the A–858/HEZ type.
- For the other types, refer to additional service manuals.

A–858 AND A–71 HAVE FOLLOWING VERSIONS :

Type	Applicable model		Power requirement	Export destination
	A–858	A–71		
HEZ	○	—	AC220V, 240V (switchable) *	West Germany
HB	○	—	AC220V, 240V (switchable) *	United Kingdom
KU/CA	—	○	AC120V only	U. S. A. and Canada

*Change the primary wiring of the power transformer.

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SA MAY. 1989 Printed in Japan

1. EXPLODED VIEW, PACKING AND PARTS LIST

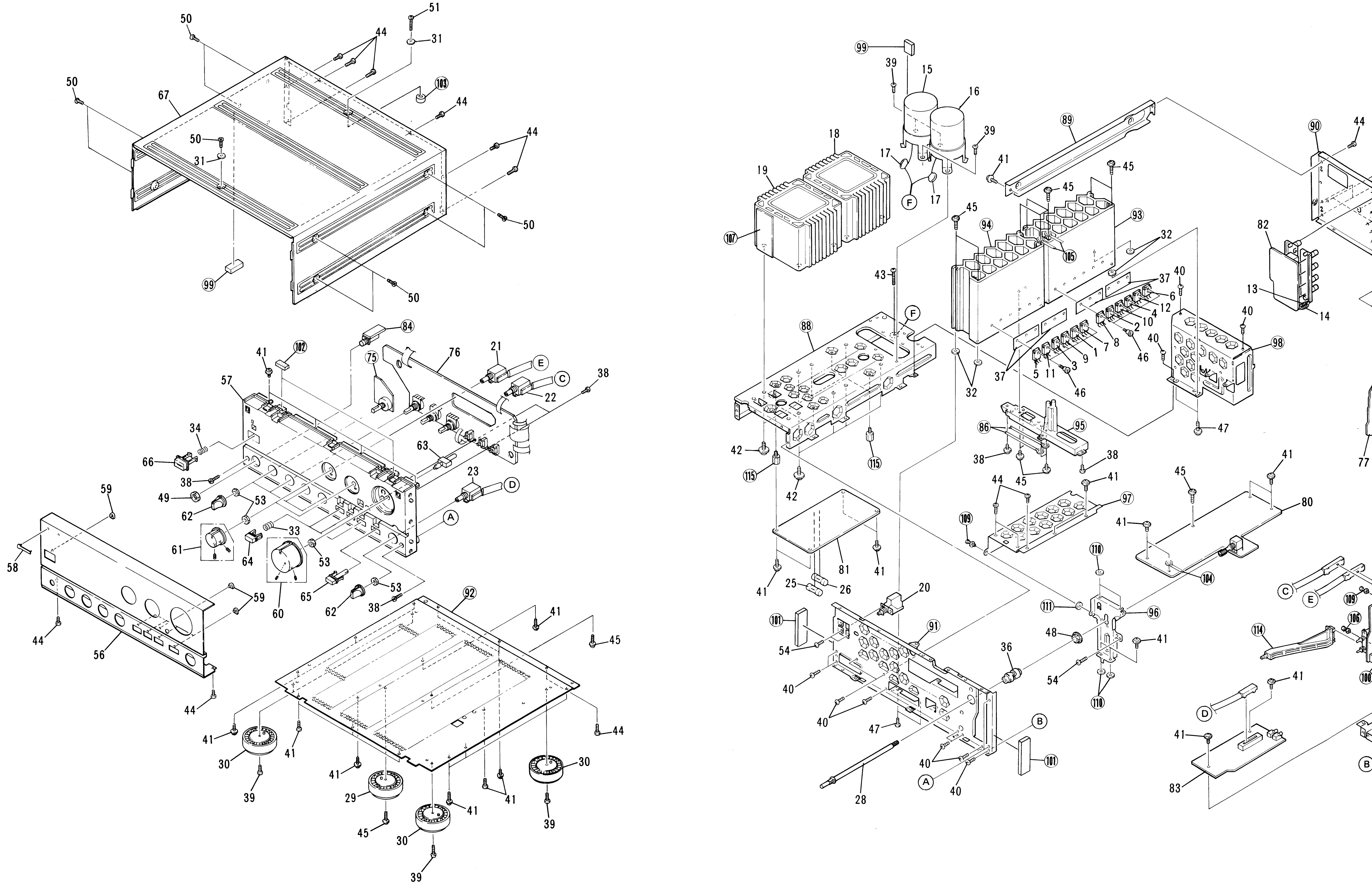
1.1 PARTS LIST

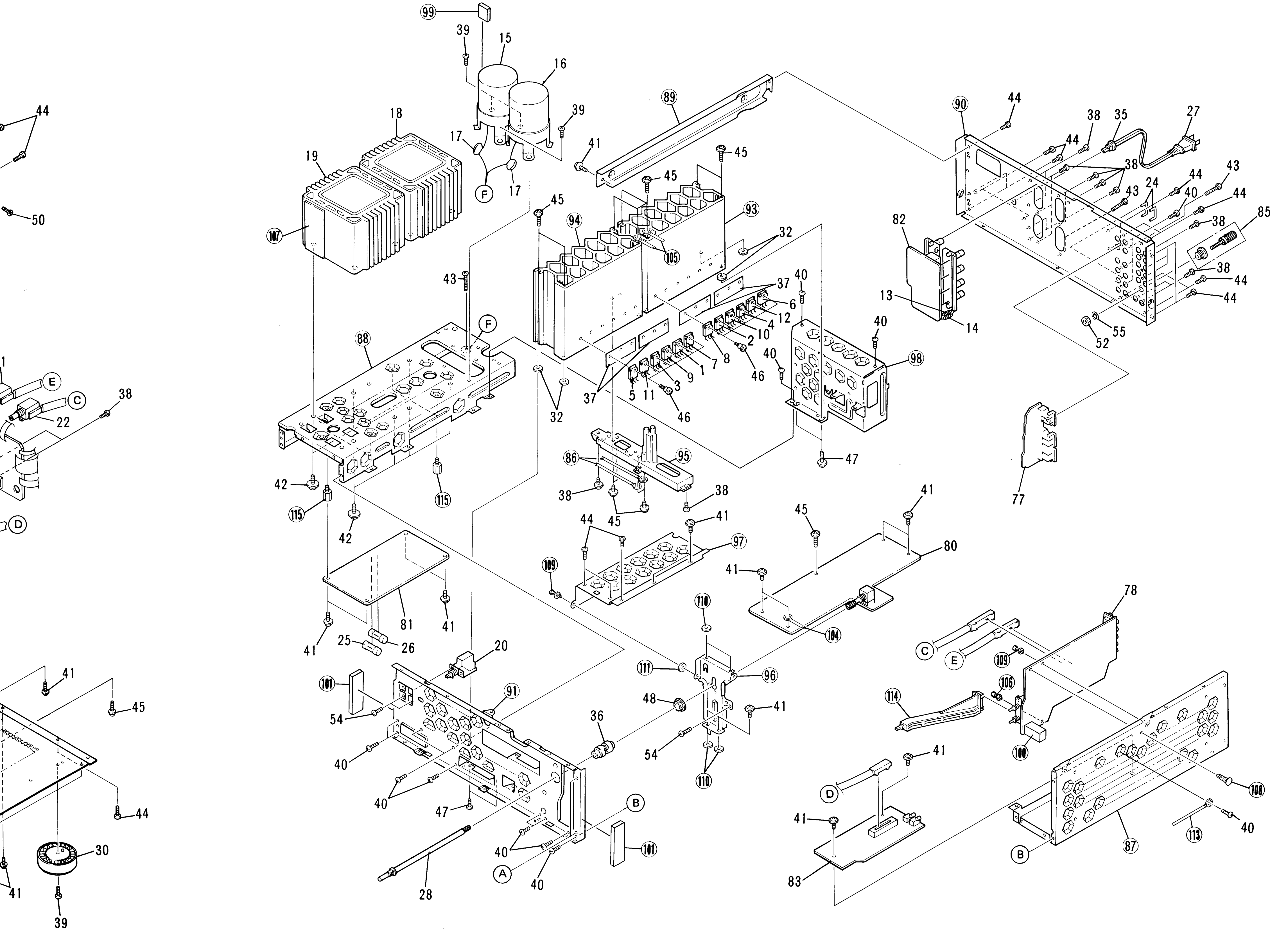
NOTES :

- Parts without part number cannot be supplied.
- The ⚠ mark found on some component parts indicates the impotance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

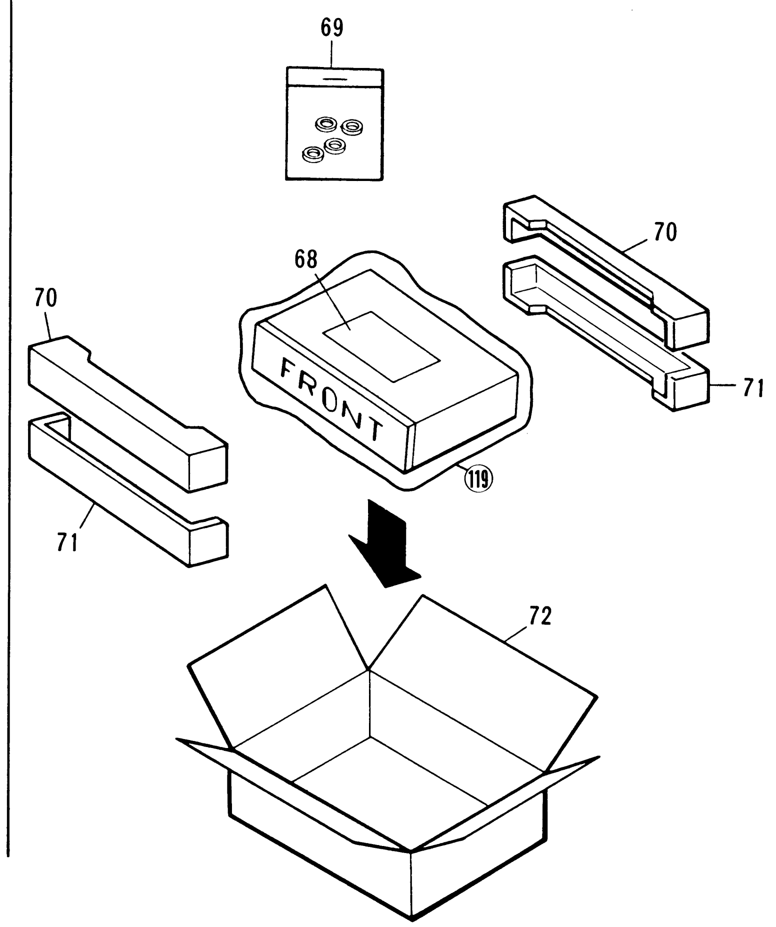
Mark	No.	Part No.	Description
⚠	1	2SA1265N	TRANSISTOR Q 3
⚠	2	2SA1265N	TRANSISTOR Q 4
⚠	3	2SA1265N	TRANSISTOR Q 7
⚠	4	2SA1265N	TRANSISTOR Q 8
⚠	5	2SA1265N	TRANSISTOR Q11
⚠	6	2SA1265N	TRANSISTOR Q12
⚠	7	2SC3182N	TRANSISTOR Q 1
⚠	8	2SC3182N	TRANSISTOR Q 2
⚠	9	2SC3182N	TRANSISTOR Q 5
⚠	10	2SC3182N	TRANSISTOR Q 6
⚠	11	2SC3182N	TRANSISTOR Q 9
⚠	12	2SC3182N	TRANSISTOR Q10
⚠	13	RDR1/4PM100J	CARBON FILM RESISTOR R1
⚠	14	RDR1/4PM100J	CARBON FILM RESISTOR R2
⚠	15	ACH1122	CAPACITOR C1
⚠	16	ACH1122	CAPACITOR C2
⚠	17	CQMXA472J100	CAPACITOR C3, C4
⚠	18	ATS1198	POWER TRANSFORMER T2
⚠	19	ATS1199	POWER TRANSFORMER T1
⚠	20	ASG-553	PUSH SWITCH S1
	21	ASU1027	SWITCH S4
	22	ASU1028	SWITCH S3
	23	ASU1029	SWITCH S2
	24	AKM1019	JUMPER PLUG
⚠	25	AEK-017	FUSE(T2A) FU3
⚠	26	AEK-017	FUSE(T2A) FU4
⚠	27	ADG1036	AC POWER CORD
	28	ANL1023	LONG SHAFT ASSEMBLY
	29	AMR1158	FOOT
	30	AMR1159	FOOT
	31	ABE1009	WASHER
	32	ABF1017	WASHER
	33	ABH1034	SPRING (B)
	34	ABH1056	SPRING (A)
	35	AEC-882	STRAIN RELIEF
	36	AMR1178	JOINT
	37	AMR1180	SHEET
	38	ABA-298	SCREW
	39	ABA1004	SCREW (STEEL)
	40	ABA1009	SCREW (STEEL)
	41	ABA1011	SCREW (STEEL)
	42	ABA1034	SCREW
	43	ABA1047	SCREW (STEEL)
	44	ABA1048	SCREW (STEEL)
	45	ABA1050	SCREW (STEEL)
	46	ABA1082	SCREW
	47	ABA1088	SCREW
	48	ABN-048	FLANGE NUT M9
	49	ABN-065	NUT
	50	BBZ40P080FZK	SCREW
	51	BBZ40P140FZK	SCREW
	52	NK70FUC	NUTS
	53	NK90FCU	NUT
	54	VMZ30P060FCU	SCREW
	55	WG70FUC	WASHER
	56	ANB1287	FRONT PANEL
	57	AMB1474	PANEL BASE
	58	AAM1029	NAME PLATE
	59	AMR1160	INDICATING LENS
	60	AAB1107	ROTARY KNOB (L)
	61	AAB1108	ROTARY KNOB (M)
	62	AAB1109	ROTARY KNOB (S)
	63	AAD1016	TACT KNOB (B)
	64	AAD1536	PUSH KNOB
	65	AAD1560	DIRECT KNOB
	66	AAD1561	POWER KNOB
	67	ANE1187	BONNET CASE
	68	ARE1119	OPERATING INSTRUCTIONS
	69	AEA1010	SPACER SET
	70	AHA1246	TOP PAD
	71	AHA1247	BOTTOM PAD
	72	AHD1618	PACKING CASE
	73		.....
	74		.....
	75		SPEAKER SWITCH ASSEMBLY
	76	AWZ2341	TONE AMP ASSEMBLY
	77	AWZ2342	REC OUT ASSEMBLY
	78	AWZ2343	INPUT SELECTOR ASSEMBLY
	79		.....
	80	AWZ2324	POWER AMP ASSEMBLY
	81	AWZ2325	POWER SUPPLY ASSEMBLY
	82	AWZ2326	SPEAKER TERM.ASSEMBLY
	83	AWZ2327	PHONO AMP ASSEMBLY
	84		HEADPHONE ASSEMBLY
	85		TERMINAL
	86		EARTH LEAD WIRE
	87		RIGHT FRAME
	88		TRANSFORMER FRAME
	89		LEFT FRAME
	90		REAR PANEL
	91		PANEL STAY
	92		BOTTOM PLATE
	93		HEAT SINK
	94		HEAT SINK
	95		HEAT SINK HOLDER
	96		VOLUME HOLDER
	97		SHIELD CASE (B)
	98		SHIELD CASE (SP)
	99		CUSHION RUBBER (C)
	100		CUSHION SPACER
	101		DAMPER SHEET (B)
	102		CUSHION RUBBER
	103		RUBBER SPACER
	104		NYLON BINDER
	105		BINDER
	106		RIVET
	107		BARRIER
	108		SPACER
	109		NYLON RIVET
	110		SPACER
	111		SPACER
	112		.....
	113		CLAMPER
	114		PUSH JOINT
	115		P.C.B HOLDER
	116		.....
	117		.....
	118		.....
	119		SHEET

1.2 EXTERIOR


A
B
C
D
E
C
D
A
F
F
C
E
D
B
A
B

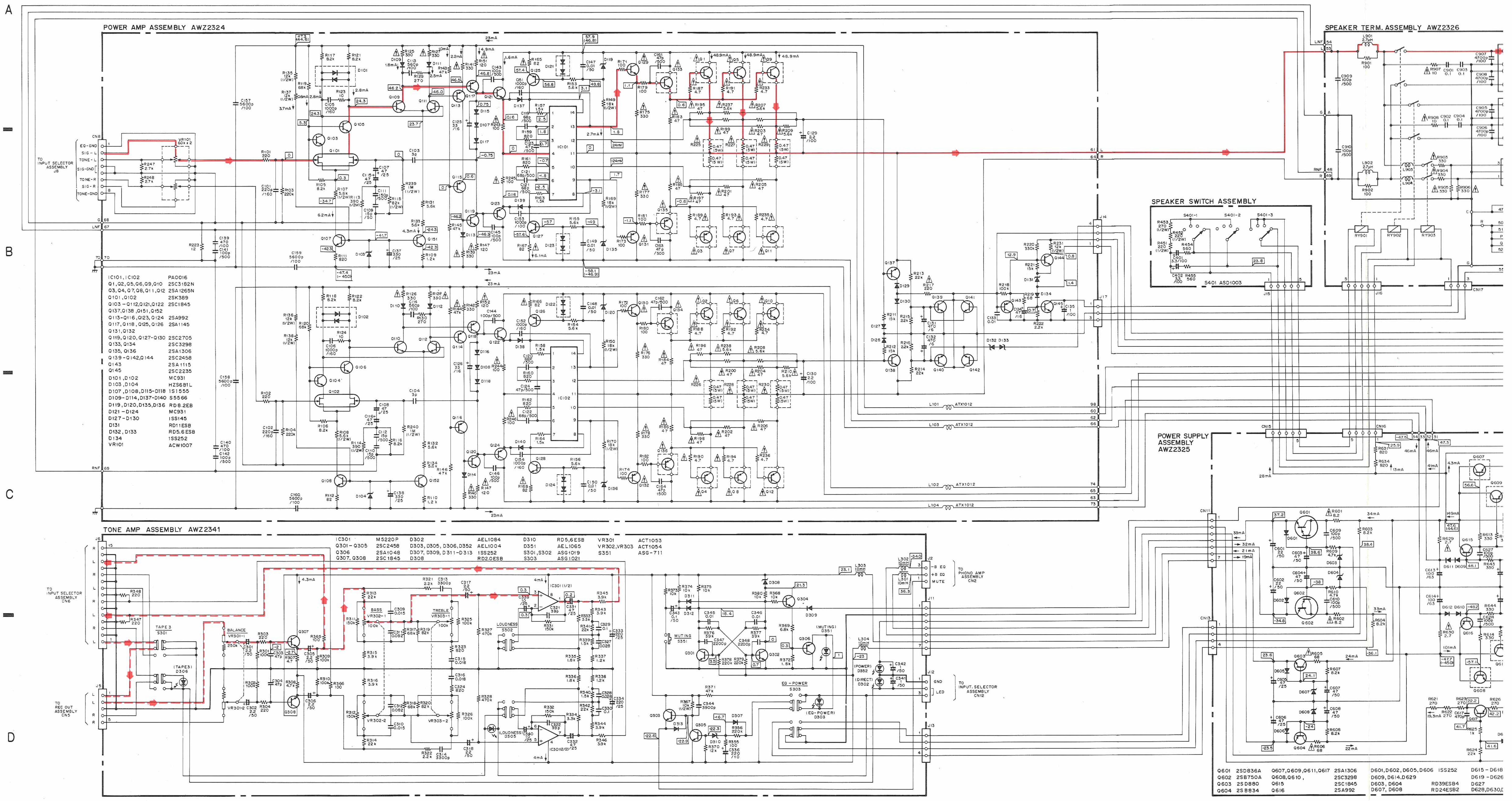

F
F
A
B
C
E
D
B
E
C
D

1.3 PACKING

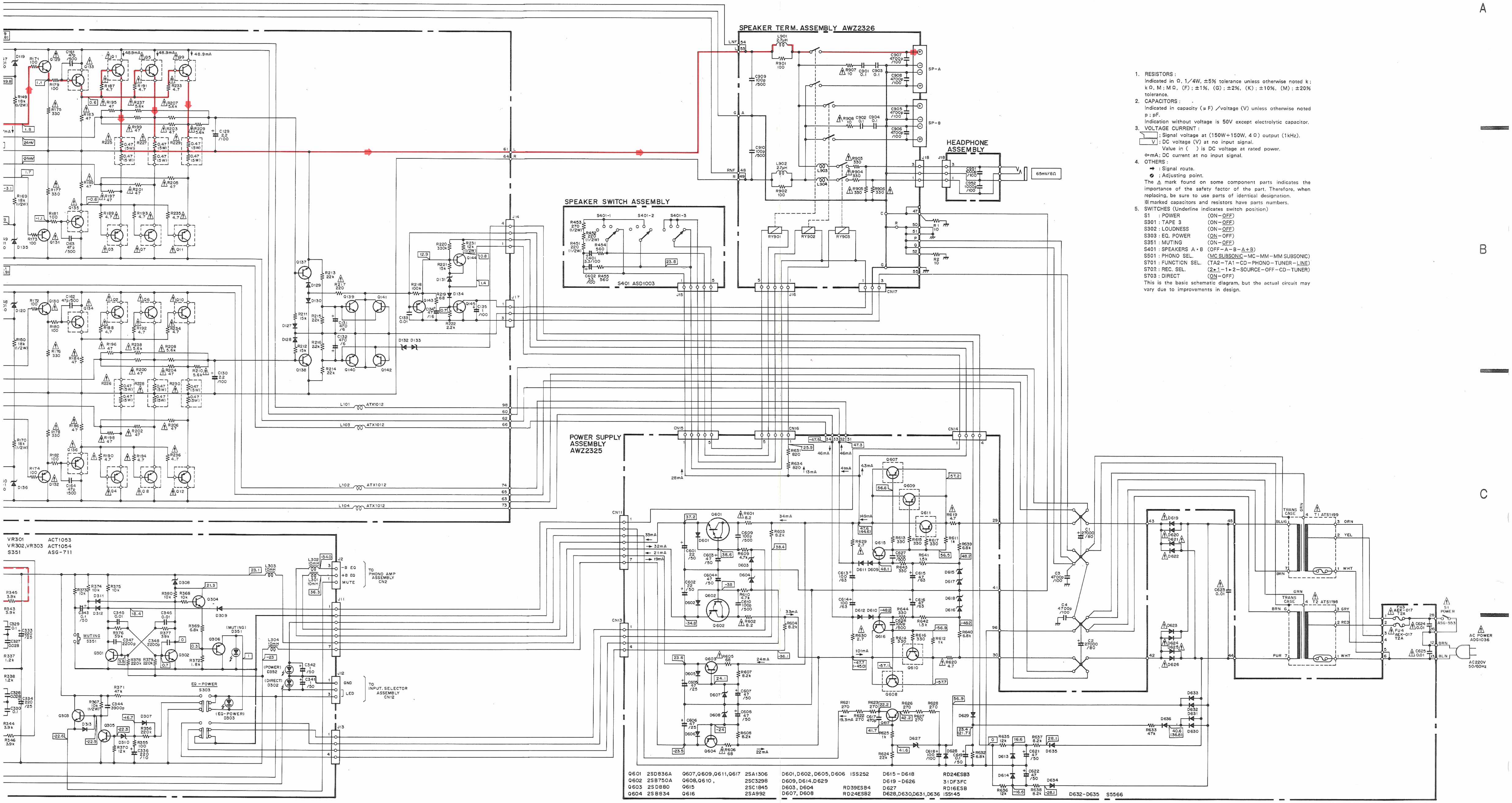

FRONT

2. SCHEMATIC AND P.C.BOARDS CONNECTION DIAGRAM

● SCHEMATIC DIAGRAM (1/2)


A
B
C
D
POWER AMP ASSEMBLY AWZ2324
SPEAKER TERM. ASSEMBLY AWZ2326
SPEAKER SWITCH ASSEMBLY
S401 ASD1003
POWER SUPPLY ASSEMBLY AWZ2325
TONE AMP ASSEMBLY AWZ2341
TO INPUT SELECTOR ASSEMBLY J8
TO INPUT SELECTOR ASSEMBLY CN6
TO REC OUT ASSEMBLY CN5
TO PHONO AMP ASSEMBLY CN2
TO INPUT SELECTOR ASSEMBLY CN12
EQ-GND
SIG-L
TONE-L
SIG-GND
TONE-R
SIG-R
TONE-GND
VR101 50k×2
TAPE 3 S301
BALANCE VR301-1
(TAPE3) D306
BASS VR302-1
TREBLE VR303-1
VR302-2
VR303-2
LOUDNESS S302
LOUDNESS D305
IC301(1/2)
IC301(2/2)
MUTING S351
(MUTING) D351
(POWER) D352
(DIRECT) D302
EQ-POWER S303
(EQ-POWER) D303
L101 ATX1012
L102 ATX1012
L103 ATX1012
L104 ATX1012
IC101
IC102
RY901
RY902
RY903
IC101, IC102 PA0016
Q1, Q2, Q5, Q6, Q9, Q10 2SC3182N
Q3, Q4, Q7, Q8, Q11, Q12 2SA1265N
Q101, Q102 2SK389
Q103 – Q112, Q121, Q122 2SC1845
Q137, Q138, Q151, Q152
Q113 – Q116, Q123, Q124 2SA992
Q117, Q118, Q125, Q126 2SA1145
Q131, Q132
Q119, Q120, Q127 – Q130 2SC2705
Q133, Q134 2SC3298
Q135, Q136 2SA1306
Q139 – Q142, Q144 2SC2458
Q143 2SA1115
Q145 2SC2235
D101, D102 MC931
D103, D104 HZS6B1L
D107, D108, D115 – D118 1S1555
D109 – D114, D137 – D140 S5566
D119, D120, D135, D136 RD8.2EB
D121 – D124 MC931
D127 – D130 1SS145
D131 RD11ESB
D132, D133 RD5.6ESB
D134 1SS252
VR101 ACW1007
IC301 M5220P
Q301 – Q305 2SC2458
Q306 2SA1048
Q307, Q308 2SC1845
D302 AEL1084
D303, D305, D306, D352 AEL1004
D307, D309, D311 – D313 1SS252
D308 RD2.0ESB
D310 RD5,6ESB
D351 AEL1065
S301, S302 ASG1019
S303 ASG1021
VR301 ACT1053
VR302, VR303 ACT1054
S351 ASG-711
Q601 2SD836A
Q602 2SB750A
Q603 2SD880
Q604 2SB834
Q607, Q609, Q611, Q617 2SA1306
Q608, Q610, 2SC3298
Q615 2SC1845
Q616 2SA992
D601, D602, D605, D606 1SS252
D609, D614, D629
D603, D604 RD39ESB4
D607, D608 RD24ESB2
D615 – D618
D619 – D626
D627
D628, D630,

AGRAM



4
5
6
7
8
9
A
B
C
SPEAKER TERM. ASSEMBLY AWZ2326
SP-A
SP-B
HEADPHONE ASSEMBLY
65mV/8Ω
SPEAKER SWITCH ASSEMBLY
S401-1
S401-2
S401-3
S401 ASD1003
RY901
RY902
RY903
L101 ATX1012
L103 ATX1012
L102 ATX1012
L104 ATX1012
POWER SUPPLY ASSEMBLY AWZ2325
T1 ATS1199
T2 ATS1198
TRANS CASE
FU3 AEK-017 T2A
FU4 AEK-017 T2A
S1 POWER ASG-553
AC POWER ADG1036
AC220V 50/60Hz
VR301 VR302, VR303 S351
ACT1053 ACT1054 ASG-711
TO PHONO AMP ASSEMBLY CN2
TO INPUT. SELECTOR ASSEMBLY CN12
MUTING S351
EQ-POWER S303
(MUTING) D351
(POWER) D352
(DIRECT) D302
(EQ-POWER) D303
Q601 2SD836A
Q602 2SB750A
Q603 2SD880
Q604 2SB834
Q607,Q609,Q611,Q617 2SA1306
Q608,Q610, 2SC3298
Q615 2SC1845
Q616 2SA992
D601,D602,D605,D606 ISS252
D609,D614,D629
D603, D604 RD39ESB4
D607, D608 RD24ESB2
D615-D618 RD24ESB3
D619-D626 31DF3FC
D627 RD16ESB
D628,D630,D631,D636 ISS145
D632-D635 S5566

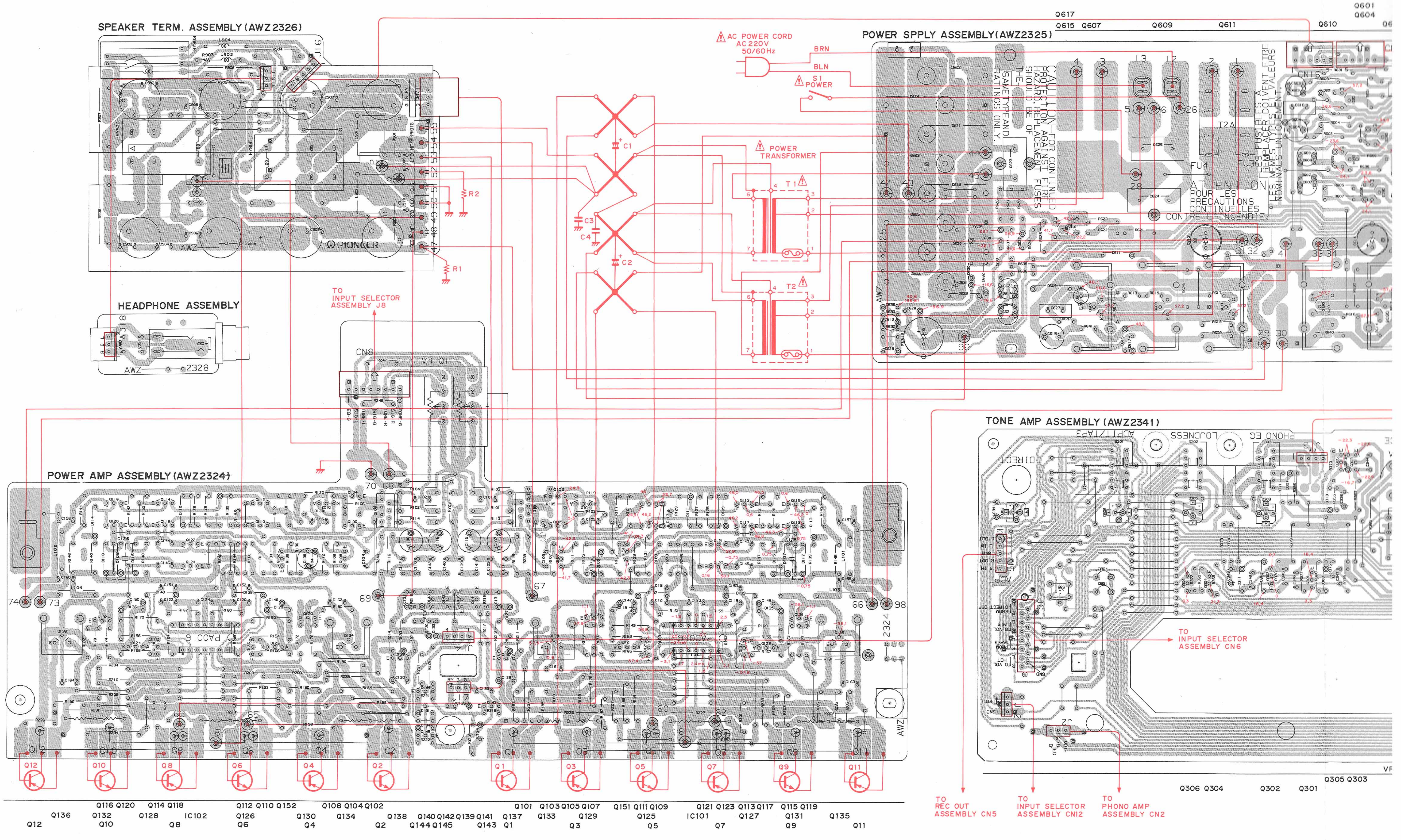
1. RESISTORS :
   Indicated in Ω, 1/4W, ±5% tolerance unless otherwise noted k ; kΩ, M ; MΩ, (F) ; ±1%, (G) ; ±2%, (K) ; ±10%, (M) ; ±20% tolerance.
2. CAPACITORS :
   Indicated in capacity (μF) /voltage (V) unless otherwise noted p ; pF.
   Indication without voltage is 50V except electrolytic capacitor.
3. VOLTAGE CURRENT :
   ▭ ; Signal voltage at (150W+150W, 4Ω) output (1kHz).
   V ; DC voltage (V) at no input signal.
   Value in ( ) is DC voltage at rated power.
   ⇦mA; DC current at no input signal.
4. OTHERS :
   ➡ : Signal route.
   ⊘ ; Adjusting point.
   The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
   ※marked capacitors and resistors have parts numbers.
5. SWITCHES (Underline indicates switch position)

S1	: POWER	(ON−OFF)
S301	: TAPE 3	(ON−OFF)
S302	: LOUDNESS	(ON−OFF)
S303	: EQ. POWER	(ON−OFF)
S351	: MUTING	(ON−OFF)
S401	: SPEAKERS A・B	(OFF−A−B−A+B)
S501	: PHONO SEL.	(MC SUBSONIC−MC−MM−MM SUBSONIC)
S701	: FUNCTION SEL.	(TA2−TA1−CD−PHONO−TUNER−LINE)
S702	: REC. SEL.	(2►1−1►2−SOURCE−OFF−CD−TUNER)
S703	: DIRECT	(ON−OFF)

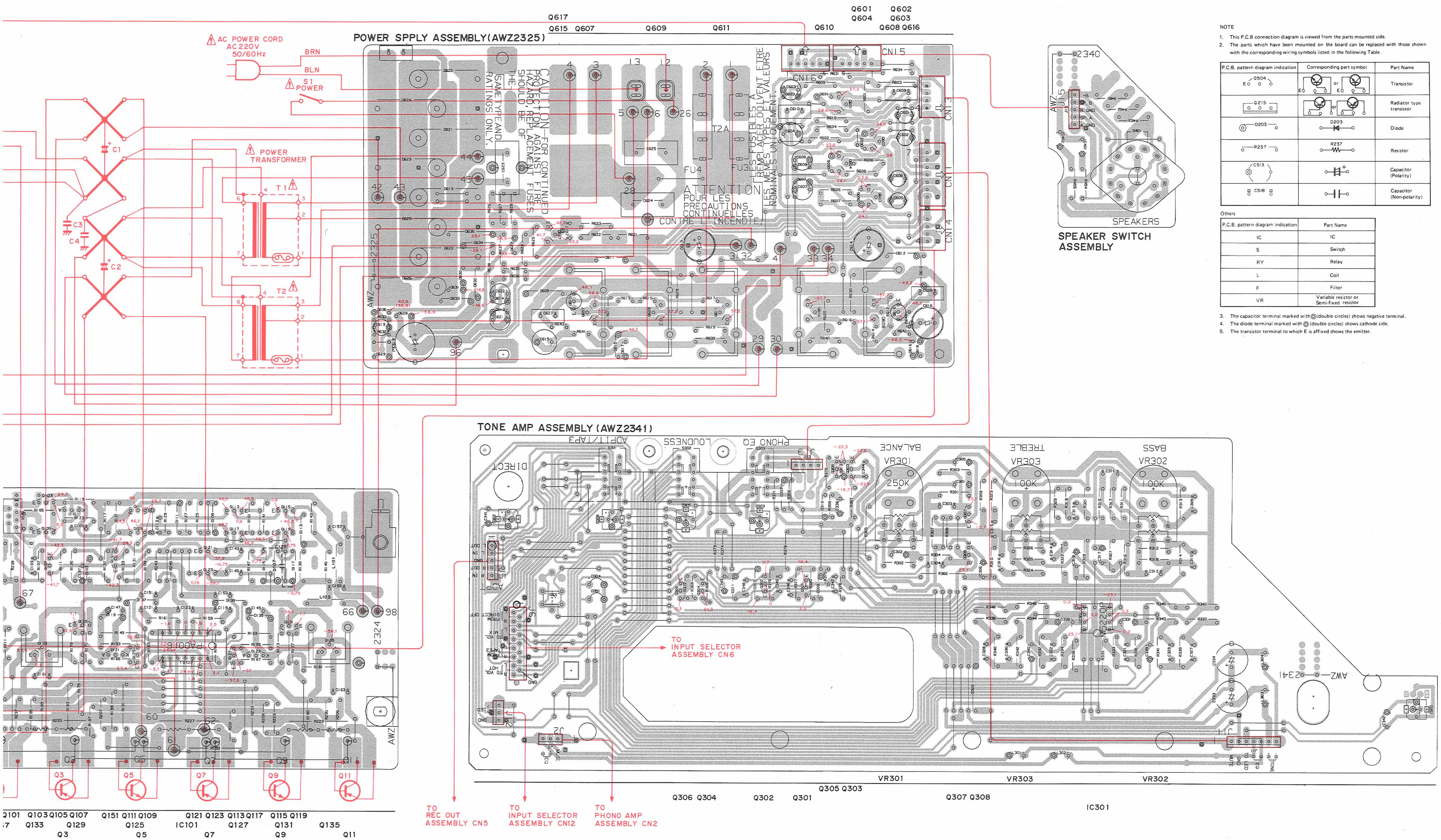
This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

● P.C. BOARDS CONNECTION DIAGRAM (1/2)

- View from component side



SPEAKER TERM. ASSEMBLY (AWZ2326)
HEADPHONE ASSEMBLY
AWZ2328
TO INPUT SELECTOR ASSEMBLY J8
CN8
VR101
POWER AMP ASSEMBLY (AWZ2324)
PA001
AWZ 2324
⚠ AC POWER CORD AC 220V 50/60Hz
BRN
BLN
⚠ S1 POWER
C1
C2
C3
C4
R1
R2
⚠ POWER TRANSFORMER
T1 ⚠
T2 ⚠
POWER SPPLY ASSEMBLY (AWZ2325)
AWZ 2325
CAUTION - FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACEMENT FUSES SHOULD BE OF THE SAME TYPE AND RATINGS ONLY.
ATTENTION POUR LES PRECAUTIONS CONTINUELLES CONTRE L'INCENDIE
LES FUSIBLES A REMPLACER DOIVENT ETRE LES MEMES TYPES ET VALEURS NOMINALES UNIQUEMENT.
FU3
FU4
T2A
CN16
Q617
Q615 Q607
Q609
Q611
Q610
Q601 Q604
TONE AMP ASSEMBLY (AWZ2341)
DIRECT
ADPT1/TAP3
LOUDNESS
PHONO EQ
TO INPUT SELECTOR ASSEMBLY CN6
TO REC OUT ASSEMBLY CN5
TO INPUT SELECTOR ASSEMBLY CN12
TO PHONO AMP ASSEMBLY CN2
Q306 Q304
Q302
Q301
Q305 Q303
Q12
Q10
Q8
Q6
Q4
Q2
Q1
Q3
Q5
Q7
Q9
Q11
Q136
Q116 Q120
Q132
Q10
Q114 Q118
Q128
Q8
IC102
Q112 Q110 Q152
Q126
Q6
Q130
Q4
Q108 Q104 Q102
Q134
Q2
Q138
Q140 Q142 Q139 Q141
Q144 Q145
Q143
Q101
Q137
Q1
Q103 Q105 Q107
Q133
Q129
Q3
Q151 Q111 Q109
Q125
Q5
IC101
Q121 Q123 Q113 Q117
Q127
Q7
Q115 Q119
Q131
Q9
Q135
Q11


POWER SPPLY ASSEMBLY (AWZ2325)
AC POWER CORD
AC 220V
50/60Hz
BRN
BLN
S1
POWER
POWER TRANSFORMER
T1
T2
C1
C2
C3
C4
Q617
Q615 Q607
Q609
Q611
Q610
Q601 Q602
Q604 Q603
Q608 Q616
CN15
CN16
CN13
CN11
CN14
FU4
FU3
T2A
CAUTION-FOR CONTINUED PROTECTION AGAINST FIRE HAZARD REPLACE ONLY WITH SAME TYPE AND RATINGS ONLY.
THE SHOULD BE OF
ATTENTION POUR LES PRECAUTIONS CONTINUELLES CONTRE L'INCENDIE
LES FUSIBLES A REMPLACER DOIVENT ETRE LES VALEURS NOMINALES UNIQUEMENT.
AWZ2325
2340
AWZ
SPEAKERS
SPEAKER SWITCH ASSEMBLY
AWZ2324
Q3
Q5
Q7
Q9
Q11
Q101 Q103 Q105 Q107
Q133 Q129
Q3
Q151 Q111 Q109
Q125
Q5
Q121 Q123 Q113 Q117
IC101 Q127
Q7
Q115 Q119
Q131
Q9
Q135
Q11
TONE AMP ASSEMBLY (AWZ2341)
DIRECT
LOUDNESS
PHONO EQ
BALANCE
TREBLE
BASS
VR301
250K
VR303
100K
VR302
100K
TO INPUT SELECTOR ASSEMBLY CN6
AWZ2341
TO REC OUT ASSEMBLY CN5
TO INPUT SELECTOR ASSEMBLY CN12
TO PHONO AMP ASSEMBLY CN2
VR301
VR303
VR302
Q306 Q304
Q302
Q301
Q305 Q303
Q307 Q308
IC301

NOTE

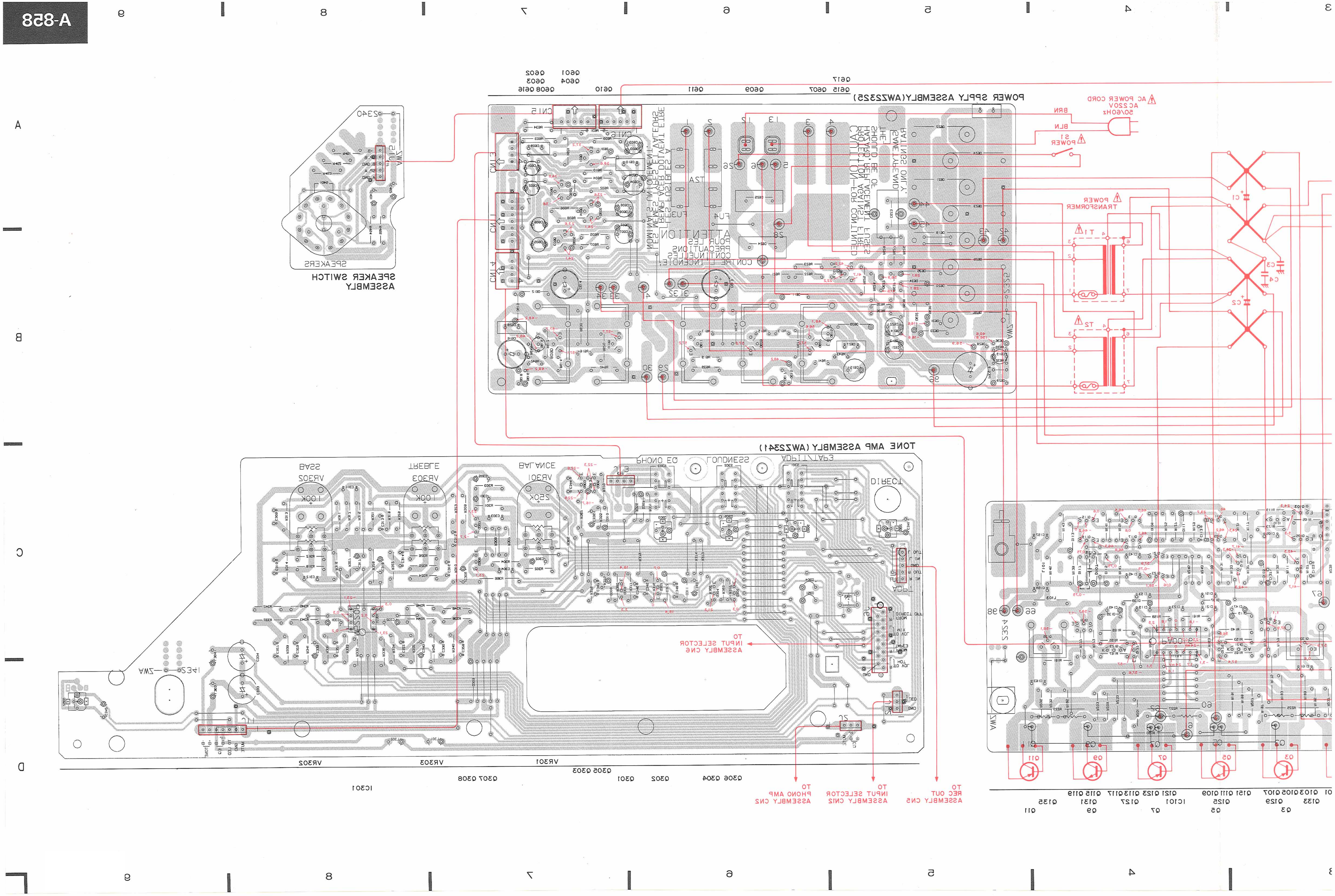
1. This P.C.B connection diagram is viewed from the parts mounted side.
2. The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504 E	E or E	Transistor
Q215	or	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513	+	Capacitor (Polarity)
C518		Capacitor (Non-polarity)

Others

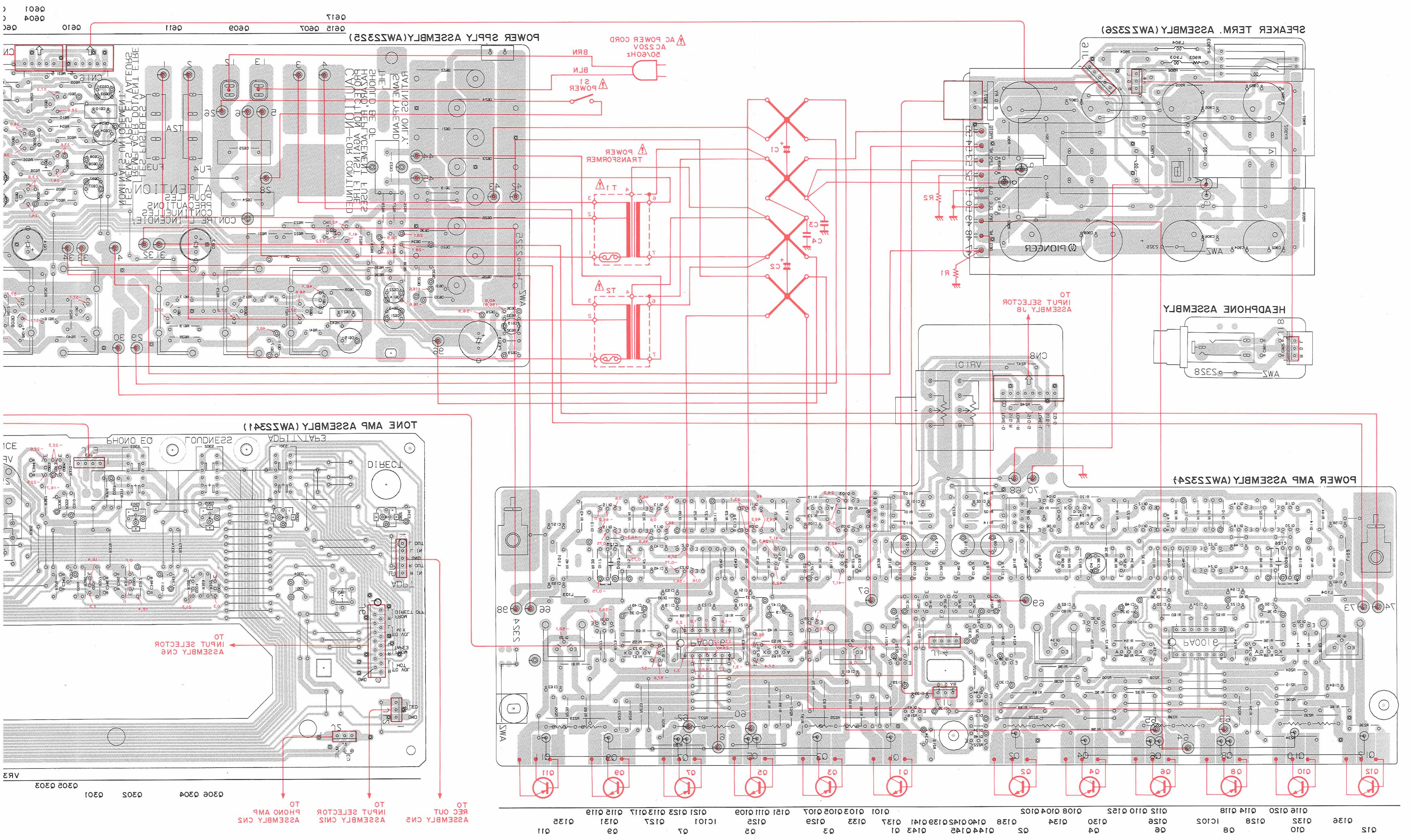
P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

3. The capacitor terminal marked with ◎ (double circles) shows negative terminal.
4. The diode terminal marked with ◎ (double circles) shows cathode side.
5. The transistor terminal to which E is affixed shows the emitter.


A-858
9
8
7
6
5
4
3
A
B
C
D
POWER SUPPLY ASSEMBLY (AWZ2325)
AC POWER CORD
AC220V
50/60Hz
BRN
BLN
S1 POWER
POWER TRANSFORMER
T1
T2
C1
C2
C3
C4
CN15
CN16
CN13
CN11
CN14
FU1
FU2
FU3
FU4
CAUTION - FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE AND RATINGS.
ATTENTION POUR LES PRECAUTIONS CONTINUELLES CONTRE LE RISQUE D'INCENDIE, N'UTILISER QUE DES FUSIBLES DE MEMES TYPES ET NOMINAL.
Q602 Q601
Q603 Q604
Q608 Q616
Q610
Q611
Q609
Q607 Q615
Q617
SPEAKERS
SPEAKER SWITCH ASSEMBLY
AWZ-345
TONE AMP ASSEMBLY (AWZ2341)
BASS
VR302
100K
TREBLE
VR303
100K
BALANCE
VR301
250K
PHONO EQ
LOUDNESS
ADPT/TAPE2
DIRECT
AWZ-2341
TO INPUT SELECTOR ASSEMBLY CN6
TO PHONO AMP ASSEMBLY CN2
TO INPUT SELECTOR ASSEMBLY CN1
TO REC OUT ASSEMBLY CN3
VR302
VR303
VR301
IC301
Q307 Q308
Q303 Q305
Q301
Q302
Q304 Q306
AWZ-345
Q11
Q9
Q7
Q5
Q3
Q135
Q119 Q115
Q131
Q117 Q113 Q123 Q121
Q127
IC101
Q109 Q111 Q151
Q125
Q107 Q105 Q103
Q129
Q133

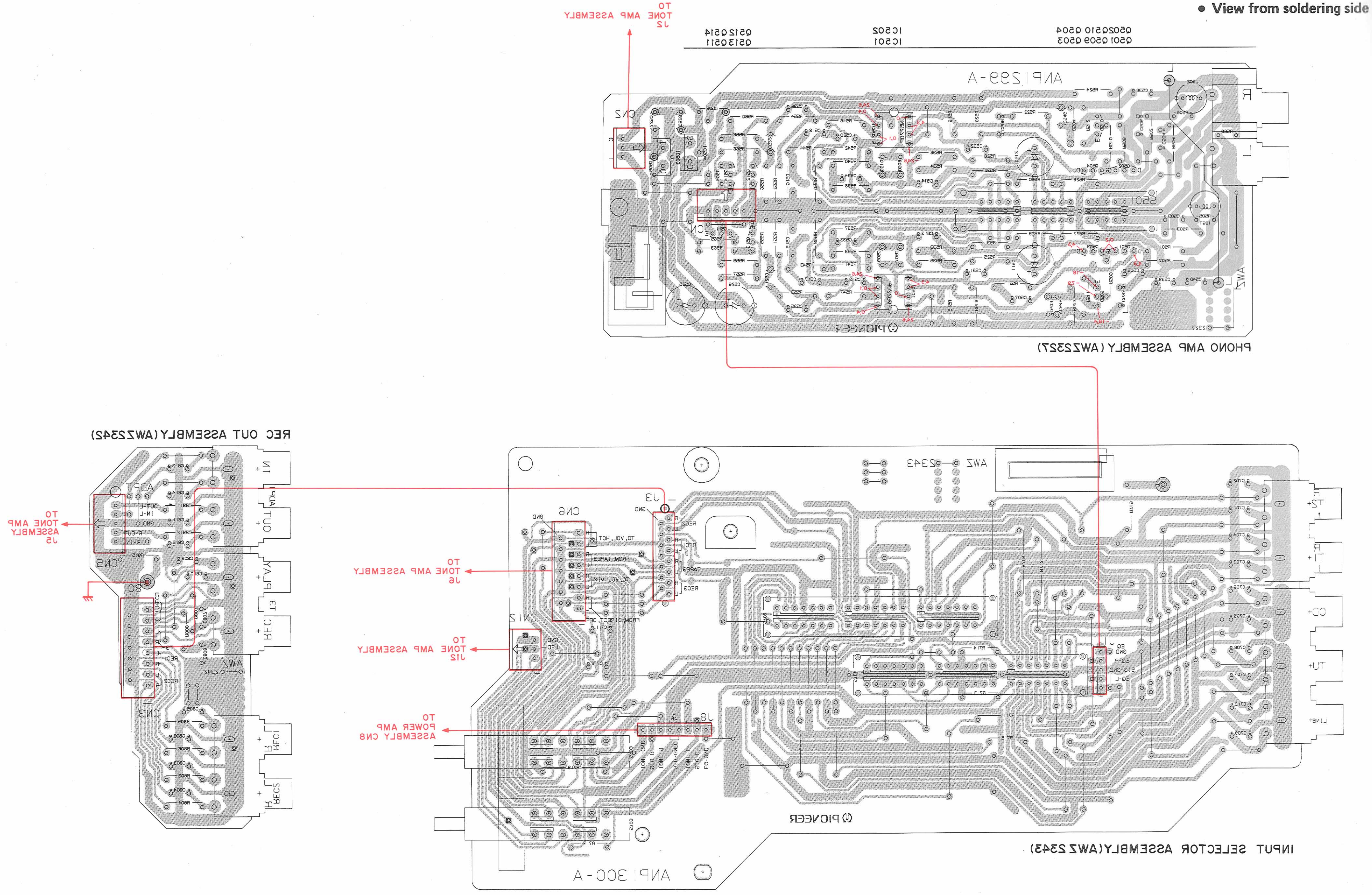
● P.C. BOARDS CONNECTION DIAGRAM (1/2)

● View from soldering side


POWER SUPPLY ASSEMBLY (AWZ2325)
SPEAKER TERM. ASSEMBLY (AWZ2326)
HEADPHONE ASSEMBLY
TONE AMP ASSEMBLY (AWZ2341)
POWER AMP ASSEMBLY (AWZ2324)
AC POWER CORD
AC220V
50/60Hz
BRN
BLN
S1
POWER
POWER TRANSFORMER
T1
T2
C1
C2
C3
C4
R1
R2
TO INPUT SELECTOR ASSEMBLY J6
CN8
VR101
PIONEER
AWZ
PHONO EQ
LOUDNESS
DIRECT
TO INPUT SELECTOR ASSEMBLY CN6
TO PHONO AMP ASSEMBLY CN2
TO INPUT SELECTOR ASSEMBLY CN2
TO REC OUT ASSEMBLY CN2
PA0016
Q1
Q2
Q3
Q4
Q5
Q6
Q7
Q8
Q9
Q10
Q11
Q12
A
B
C
D
1
2
3
4
5
6

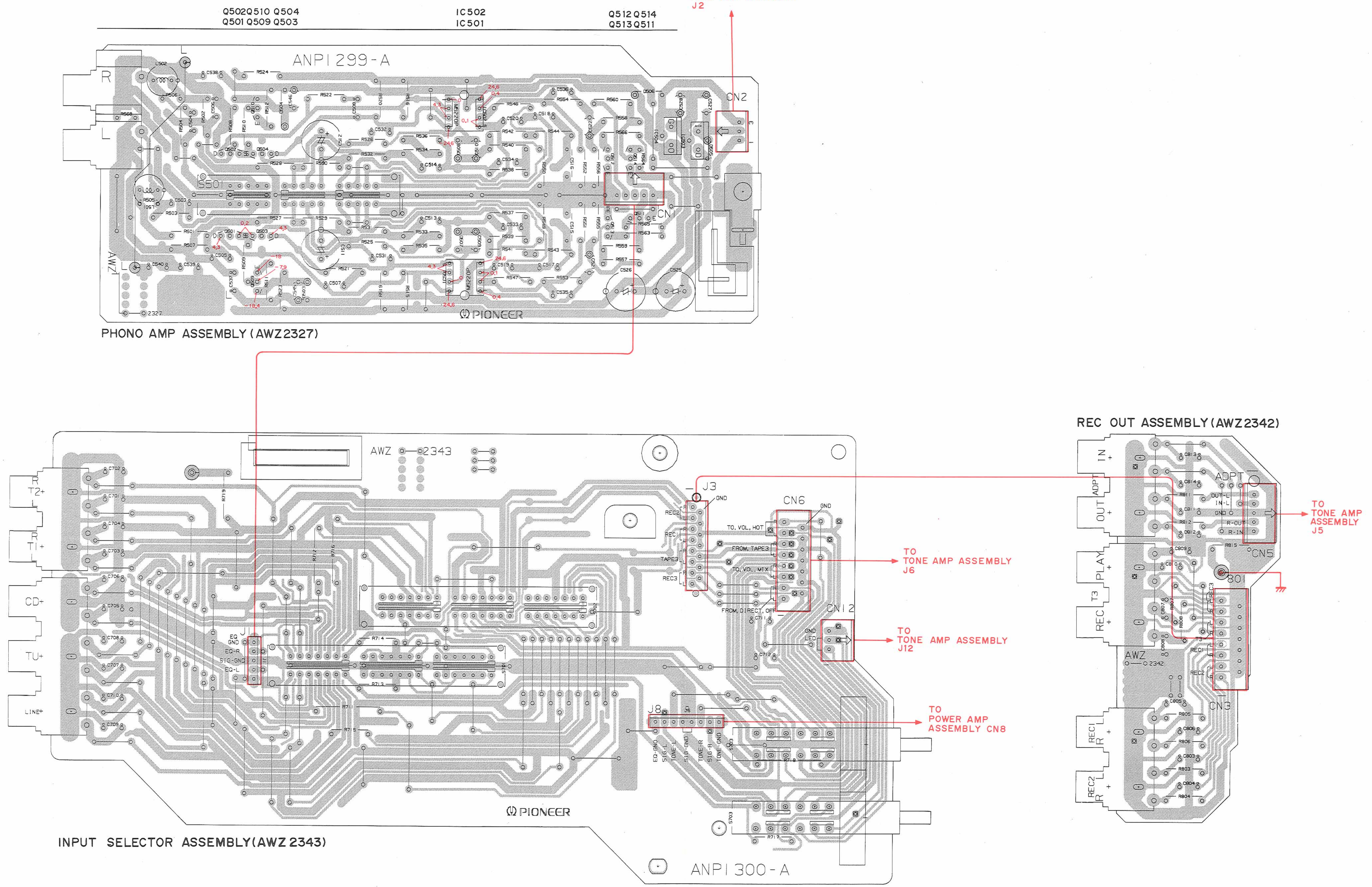
● P.C. BOARDS CONNECTION DIAGRAM (2/2)

- View from soldering side

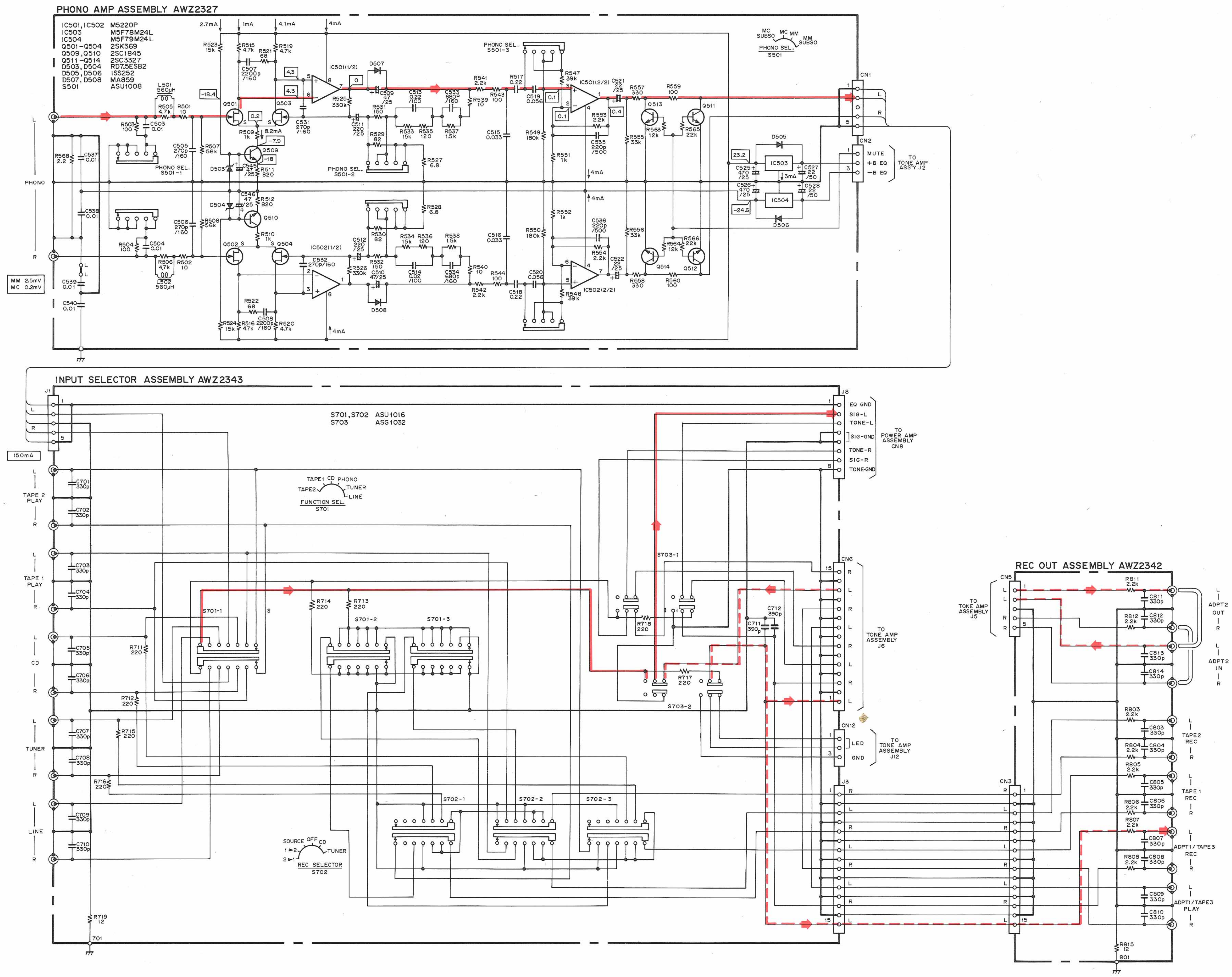

TO TONE AMP ASSEMBLY J2
Q512 Q514
Q513 Q511
IC502
IC501
Q502 Q510 Q504
Q501 Q509 Q503
ANP1299-A
CN2
CN1
PIONEER
PHONO AMP ASSEMBLY (AWZ2327)
REC OUT ASSEMBLY (AWZ2342)
TO TONE AMP ASSEMBLY J5
CN5
CN3
TO TONE AMP ASSEMBLY J6
CN6
J3
TO TONE AMP ASSEMBLY J12
CN12
TO POWER AMP ASSEMBLY CN8
J8
J1
AWZ2343
ANP1300-A
PIONEER
INPUT SELECTOR ASSEMBLY (AWZ2343)
IN
OUT
PLAY
REC
REC2
T2
T1
CD
TU
LINE

●P.C. BOARDS CONNECTION DIAGRAM (2/2)

- View from component side


Q502 Q510 Q504
Q501 Q509 Q503
IC502
IC501
Q512 Q514
Q513 Q511
TO TONE AMP ASSEMBLY J2
ANP1299-A
CN2
CN1
PIONEER
PHONO AMP ASSEMBLY (AWZ2327)
AWZ 2343
J3
CN6
GND
REC2
REC1
TAPE3
REC3
TO, VOL, HOT
FROM, TAPE3
TO, VOL., MIX
FROM, DIRECT, OFF
TO TONE AMP ASSEMBLY J6
CN12
LED
TO TONE AMP ASSEMBLY J12
EQ GND
EQ-R
SIG-GND
EQ-L
J8
TO POWER AMP ASSEMBLY CN8
T2
T1
CD
TU
LINE
PIONEER
INPUT SELECTOR ASSEMBLY (AWZ2343)
ANP1300-A
REC OUT ASSEMBLY (AWZ2342)
IN
ADPT
OUT
PLAY
T3
REC
OUT-L
IN-L
GND
R-OUT
R-IN
CN5
TO TONE AMP ASSEMBLY J5
801
AWZ 2342
CN3
REC1
REC2

● SCHEMATIC DIAGRAM (2/2)


PHONO AMP ASSEMBLY AWZ2327
IC501, IC502 M5220P
IC503 M5F78M24L
IC504 M5F79M24L
Q501–Q504 2SK369
Q509, Q510 2SC1845
Q511–Q514 2SC3327
D503, D504 RD7.5ESB2
D505, D506 ISS252
D507, D508 MA859
S501 ASU1008
PHONO
MM 2.5mV
MC 0.2mV
PHONO SEL. S501-1
PHONO SEL. S501-2
PHONO SEL. S501-3
PHONO SEL. S501
MC SUBSO
MC MM
MM SUBSO
IC501(1/2)
IC501(2/2)
IC502(1/2)
IC502(2/2)
IC503
IC504
CN1
CN2
MUTE
+B EQ
−B EQ
TO TONE AMP ASS'Y J2
INPUT SELECTOR ASSEMBLY AWZ2343
S701, S702 ASU1016
S703 ASG1032
150mA
TAPE 2 PLAY
TAPE 1 PLAY
CD
TUNER
LINE
TAPE1 CD PHONO
TAPE2 TUNER
LINE
FUNCTION SEL. S701
S701-1
S701-2
S701-3
S703-1
S703-2
S702-1
S702-2
S702-3
SOURCE OFF CD
1 TUNER
2
REC SELECTOR S702
J1
J8
EQ GND
SIG-L
TONE-L
SIG-GND
TONE-R
SIG-R
TONE-GND
TO POWER AMP ASSEMBLY CN8
CN6
TO TONE AMP ASSEMBLY J6
CN12
LED
GND
TO TONE AMP ASSEMBLY J12
J3
REC OUT ASSEMBLY AWZ2342
CN5
TO TONE AMP ASSEMBLY J5
CN3
ADPT2 OUT
ADPT2 IN
TAPE2 REC
TAPE1 REC
ADPT1/TAPE3 REC
ADPT1/TAPE3 PLAY
1
2
3
4
5
6
A
B
C
D

3. ELECTRICAL PARTS LIST

NOTES :

- Parts without part number cannot be supplied.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The ⚠ mark found on some component parts indicates the impotance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω 56×10^1 561 ········ RD1/4PS $\boxed{5}\boxed{6}\boxed{1}$ J
47k Ω 47×10^3 473 ········ RD1/4PS $\boxed{4}\boxed{7}\boxed{3}$ J
0.5 Ω 0R5 ········ RN2H $\boxed{0}\boxed{R}\boxed{5}$ K
1 Ω 010 ········ RS1P $\boxed{0}\boxed{1}\boxed{0}$ K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω 562×10^1 5621 ········ RN1/4SR $\boxed{5}\boxed{6}\boxed{2}\boxed{1}$ F

Miscellaneous Parts

P. C. BOARD ASSEMBLIES

Mark	Symbol & Description	Part No.
	Power amp assembly	AWZ2324
	Power supply assembly	AWZ2325
	Speaker term. assembly	AWZ2326
	Phono amp assembly	AWZ2327
	Tone amp assembly	AWZ2341
	Rec out assembly	AWZ2342
	Input selector assembly	AWZ2343
	Headphone assembly	
	Speaker switch assembly	

OTHERS

Mark	Symbol & Description	Part No.
⚠	Q1, Q2, Q5, Q6, Q9, Q10	2SC3182N
⚠	Q3, Q4, Q7, Q8, Q11, Q12	2SA1265N
⚠	R1, R2	RDR¼PM100J
⚠	C1, C2 (0.027 μF/80)	ACH1122
⚠	C3, C4	CQMXA472J100
⚠	T2 Power transformer	ATS1198
⚠	T1 Power transformer	ATS1199
⚠	S1 Push switch (POWER)	ASG-553
	S4 Switch	ASU1027
	S3 Switch	ASU1028
	S2 Switch	ASU1029
⚠	FU3, FU4 Fuse (T2A)	AEK-017
⚠	AC power cord	ADG1036

Power Amp Assembly (AWZ2324)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC101, IC102	PA0016
	Q143	2SA1115
	Q117, Q118, Q125, Q126, Q131, Q132	2SA1145
	Q135, Q136	2SA1306
	Q113–Q116, Q123, Q124	2SA992
	Q103–Q112, Q121, Q122, Q137, Q138, Q151, Q152	2SC1845
	Q145	2SC2235
	Q139–Q142, Q144	2SC2458
	Q119, Q120, Q127–Q130	2SC2705
	Q133, Q134	2SC3298
	Q101, Q102	2SK389
	D103, D104	HZS6B1L
	D101, D102, D121–D124	MC931
	D131	RD11ESB
	D132, D133	RD5.6ESB
	D119, D120, D135, D136	RD8.2EB
	D109–D114, D137–D140	S5566
	D127–D130	1SS145
	D134	1SS252
	D107, D108, D115–D118	1S1555

FILTERS

Mark	Symbol & Description	Part No.
	L101–L104 Filter	ATX1012

CAPACITORS

Mark	Symbol & Description	Part No.
	C129, C130	CEANP2R2M100
	C135	CEAS010M100
	C134	CEAS470M16
	C131, C132	CEAS471M6
	C137, C138	CEYA331M25
	C125, C126	CEYA330M16
	C107, C108, C115, C116	CEYA470M25
	C133, C147–C150	CKCYF103Z50
	C103, C104	CMA030D500
	C141–C146	CMA101J500
	C109–C112	CMA150J500
	C123, C124, C161–C164	CMA470J500
	C119–C122	CMA680J500
	C157–C160	CQMXA562J100
	C139, C140	CQPXA471J2A
	C105, C106, C151–C154	CQSXA102J160
	C101, C102	CQSXA221J160
	C113, C114	CQSXA561J160

RESISTORS

Mark	Symbol & Description	Part No.
⚠	R225–R230 (0.47 Ω)	ACN-130
	VR101 Variable resistor (60k×2)	ACW1007
	R113–R116, R239, R240	RDR½PM□□□J
	R107, R108, R135–R138, R149, R150, R169, R170, R231	RD½PM□□□J
⚠	R139, R140, R175–R178, R207–R210, R217, R237, R238	RD¼PMF□□□J
	R211–R214, R219	RD¼PM□□□J
	R215, R216, R218, R220–R222	RD⅛PM□□□J
⚠	R125–R128, R141, R142, R147, R148, R151, R152, R165–R168, R171–R174, R179–R206, R233–R236, R241–R246	RFA¼PS□□□J
	Other resistors	RDR¼PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	Screw	ABA-298

Power Supply Assembly (AWZ2325)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	Q607, Q609, Q611, Q617	2SA1306
	Q616	2SA992
	Q602	2SB750A
	Q604	2SB834
	Q615	2SC1845
	Q608, Q610	2SC3298
	Q601	2SD836A
	Q603	2SD880
	D627	RD16ESB
	D607, D608	RD24ESB2
	D615–D618	RD24ESB3
	D604	RD39ESB1
	D603	RD39ESB4
	D632–D635	S5566
	D628, D630, D631, D636	1SS145
	D601, D602, D605, D606, D609–D614, D629	1SS252
⚠	D619–D626	31DF3FC

CAPACITORS

Mark	Symbol & Description	Part No.
⚠	C623–C625 (0.01 μF/AC400V)	ACG1003
	C619	CEAS0R1M50
	C618	CEAS101M100
	C621, C622	CEAS470M50
	C613, C614, C616	CEXA101M63
	C601, C602	CEXA220M50
	C605, C606	CEXA470M25
	C603, C604, C607, C608	CEXA470M50
	C615	CEXA470M63
	C617	CKCYB471K50
	C609, C610, C627, C628	CMA101J500

RESISTORS

Mark	Symbol & Description	Part No.
	R611–R617, R641–R644	RDR⅙PU□□□J
⚠	R629, R630	RD¼PMF2R7J
	R632, R633, R635, R636	RD⅛PM□□□J
⚠	R601, R602, R605, R606, R619, R620	RFA¼PS□□□J
	Other resistors	RD¼PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	Screw	ABA-298

Speaker Term. Assembly (AWZ2326)

RELAYS

Mark	Symbol & Description	Part No.
	RY903 Relay	ASR1014
	RY901, RY902 Relay	ASR1026

COILS

Mark	Symbol & Description	Part No.
	L901, L902 AF choke coil	ATH1021
	L903, L904 (Bead filter)	ATX1012

CAPACITORS

Mark	Symbol & Description	Part No.
	C901–C904	CFTXA104J50
	C909, C910	CMA101J500
	C905–C908	CQPXA472J2A

RESISTORS

Mark	Symbol & Description	Part No.
⚠	R901, R902	RS1LMF101J
⚠	R903–R906	RS2LMF331J
⚠	R907, R908	RS3LMF100J

OTHERS

Mark	Symbol & Description	Part No.
	Speaker terminal 4P (SPEAKERS A/B)	AKE1015

Phono Amp Assembly (AWZ2327)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC503	M5F78M24L
	IC504	M5F79M24L
	IC501, IC502	M5220P
	Q509, Q510	2SC1845
	Q511–Q514	2SC3327
	Q501–Q504	2SK369
	D507, D508	MA859
	D503, D504	RD7.5ESB2
	D505, D506	1SS252

SWITCH

Mark	Symbol & Description	Part No.
	S501 Remote slide switch (PHONO SELECTOR)	ASU1008

COILS

Mark	Symbol & Description	Part No.
	L501, L502 Coil	ATH1024

CAPACITORS

Mark	Symbol & Description	Part No.
	C521, C522	CEXA220M25
	C527, C528	CEXA220M50
	C511, C512	CEXA221M25
	C509, C510, C545, C546	CEXA470M25
	C525, C526	CEXA471M25
	C503, C504, C537–C540	CFTXA103J50
	C517, C518	CFTXA224J50
	C519, C520	CFTXA563J50
	C535, C536	CMA221J500
	C513, C514	CQPXA224J2A
	C515, C516	CQPXA333J2A
	C507, C508	CQSXA222J160
	C505, C506, C531, C532	CQSXA271J160
	C533, C534	CQSXA681J160

RESISTORS

Mark	Symbol & Description	Part No.
	R505, R506	RDR⅙PU472J
	R563–R566, R568	RD⅛PM□□□J
	Other resistors	RDR¼PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	Pin jack 1P (PHONO L)	AKB1027
	Pin jack 1P (PHONO R)	AKB1028

Tone Amp Assembly (AWZ2341)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC301	M5220P
	Q306	2SA1048
	Q307, Q308	2SC1845
	Q301–Q305	2SC2458
	D303, D305, D306, D352	AEL1004–B
	D351	AEL1065–A
	D302	AEL1084–A
	D308	RD2.0ESB
	D310	RD5.6ESB
	D307, D309, D311–D313	1SS252

SWITCHES

Mark	Symbol & Description	Part No.
	S351 Tact switch (MUTING)	ASG–711
	S301, S302 Push switch (ADPT1/TAPE3)	ASG1019
	S303 Push switch (LOUDNESS)	ASG1021

COILS

Mark	Symbol & Description	Part No.
	L301–L304 Inductor (10mH)	LTA103J

CAPACITORS

Mark	Symbol & Description	Part No.
	C321, C322	CCCSL390J50
	C303, C304	CCCSL470J50
	C301, C302	CEANL2R2M50
	C343	CEAS0R1M50
	C341, C342	CEAS010M50
	C339, C340	CEAS100M25
	C305, C306, C317, C318	CEAS2R2M50
	C336	CEAS221M10
	C333, C334	CEAS221M25
	C331, C332	CEAS470M25
	C329, C330	CFTXA104J50
	C309, C310	CFTXA153J50
	C315, C316	CFTXA183J50
	C311, C312, C327, C328	CFTXA823J50
	C347, C348	CKCYB222K50
	C344	CKCYB392K50
	C345, C346	CKCYF103Z50
	C313, C314	CQMA332K50

RESISTORS

Mark	Symbol & Description	Part No.
	VR301 Variable resistor (BALANCE) (250k×2)	ACT1053
	VR302, VR303 Variable resistor (BASS, TREBLE) (100k–20A×2)	ACT1054
	R367	RD½PM103J
	R355, R356, R368–R380	RD⅛PM□□□J
	Other resistors	RD¼PM□□□J

Rec Out Assembly (AWZ2342)

CAPACITORS

Mark	Symbol & Description	Part No.
	C803–C814	CKDYB331K50

RESISTORS

Mark	Symbol & Description	Part No.
	R815	RDR¼PM120J
	R803–R806, R811, R812	RD¼PM222J
	R807, R808	RD⅛PM222J

OTHERS

Mark	Symbol & Description	Part No.
	Pin jack 4P (TAPE2, DAT/TAPE1, ADPT1/ TAPE3, ADPT2)	AKB1009

Input Selector Assembly (AWZ2343)

SWITCHES

Mark	Symbol & Description	Part No.
	S703 Push switch (DIRECT)	ASG1032
	S701, S702 Remote slide switch (INPUT SELECTOR, REC SELECTOR)	ASU1016

CAPACITORS

Mark	Symbol & Description	Part No.
	C701−C710	CKDYB331K50
	C711, C712	CKDYB391K50

RESISTORS

Mark	Symbol & Description	Part No.
	R719	RDR¼PM120J
	R711, R712	RDR¼PM221J
	R713−R718	RD¼PM221J

OTHERS

Mark	Symbol & Description	Part No.
	Pin jack 4P (TAPE2, DAT/TAPE1)	AKB1007
	Pin jack 6P (CD, TUNER, LINE)	AKB1029

Headphone Assembly

CAPACITORS

Mark	Symbol & Description	Part No.
	C951, C952	CQMXA102J100

OTHERS

Mark	Symbol & Description	Part No.
	Headphone jack (PHONES)	AKN1002

Speaker Switch Assembly

SWITCHES

Mark	Symbol & Description	Part No.
	S401 Rotaly switch (SPEAKERS)	ASD1003

CAPACITORS

Mark	Symbol & Description	Part No.
	C401, C402	CEAS3R3M100

RESISTORS

Mark	Symbol & Description	Part No.
	R454, R455	RD¼PM561J
	Other resistors	RD½PM□□□J

4. SPECIFICATIONS

Continuous power output (both channels driven at 20 Hz to 20 kHz) **	
T.H.D. 0.003%, 8 Ω	105W + 105W*
T.H.D. 0.005%, 4 Ω	160W + 160W*
DIN continuous power output (both channels driven)	
1 kHz, T.H.D. 1.0%, 8 Ω	120W + 120W
1 kHz, T.H.D. 1.0%, 4 Ω	180W + 180W
Power bandwidth	
0.05%, 8 Ω	5 Hz – 60 kHz*
Damping factor	
(1 kHz/20 Hz to 20 kHz), 8 Ω	200/70
Dynamic power output (on EIA dynamic test signal)	
4 Ω /2 Ω	230W/350W
Total harmonic distortion **	
20 Hz to 20 kHz, 105W, 8 Ω	0.003% *
20 Hz to 20 kHz, 160W, 4 Ω	0.005% *
Inter-modulation distortion (at rated output)	0.003% *
Input sensitivity/impedance	
PHONO (MM)	2.5 mV/50 k Ω
PHONO (MC)	0.2 mV/100 Ω
CD, TUNER, LINE, TAPE	150 mV/50 k Ω
PHONO overload level	
1 kHz, T.H.D. 0.008% (MM/MC)	200 mV/19 mV
Output level/impedance	
TAPE REC, ADAPTOR OUTPUT	150 mV/2.2 k Ω
Frequency response	
PHONO (MM), 20 Hz to 20 kHz	± 0.2 dB
PHONO (MC), 20 Hz to 20 kHz	± 0.3 dB
CD, TUNER, LINE, TAPE (1 Hz to 150 kHz)	$^{+0}_{-3}$ dB*
Tone control (volume control set at –40 dB position)	
BASS	± 8 dB (100 Hz)
TREBLE	± 8 dB (10 kHz)
MUTING	–∞
Loudness contour (volume control set at –40 dB position)	
	+5 dB (100 Hz)/+3 dB (10 kHz)
Filter (SUBSONIC)	17 Hz (12 dB/oct.)
Signal-to-Noise ratio (IHF short circuit, A network)	
PHONO (MM, 5 mV input/MC, 0.5 mV input)	95 dB/77 dB*
CD, TUNER, LINE, TAPE	110 dB*
Signal-to-Noise ratio (DIN, continuous power/50 mW)	
PHONO (MM)	74 dB/65 dB*
CD, TUNER, LINE, TAPE	92 dB/68 dB*

Power Supply/Miscellaneous

Power requirements	a.c. 220 Volts ~, 50/60 Hz
Power consumption	1,000W
Dimensions	420 (W) × 474 (D) × 172 (H) mm
Weight (without package)	24.5 kg

Accessories

Operating instructions	1
Cushion spacer set	1

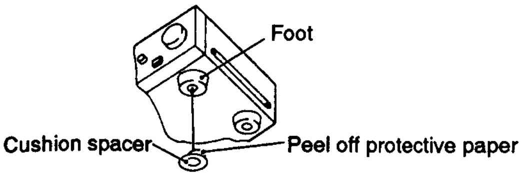
NOTE:

Specifications and design subject to possible modification without notice, due to improvements.

* Measured with the DIRECT switch set to ON.

** Measured by Audio Spectrum Analyzer.

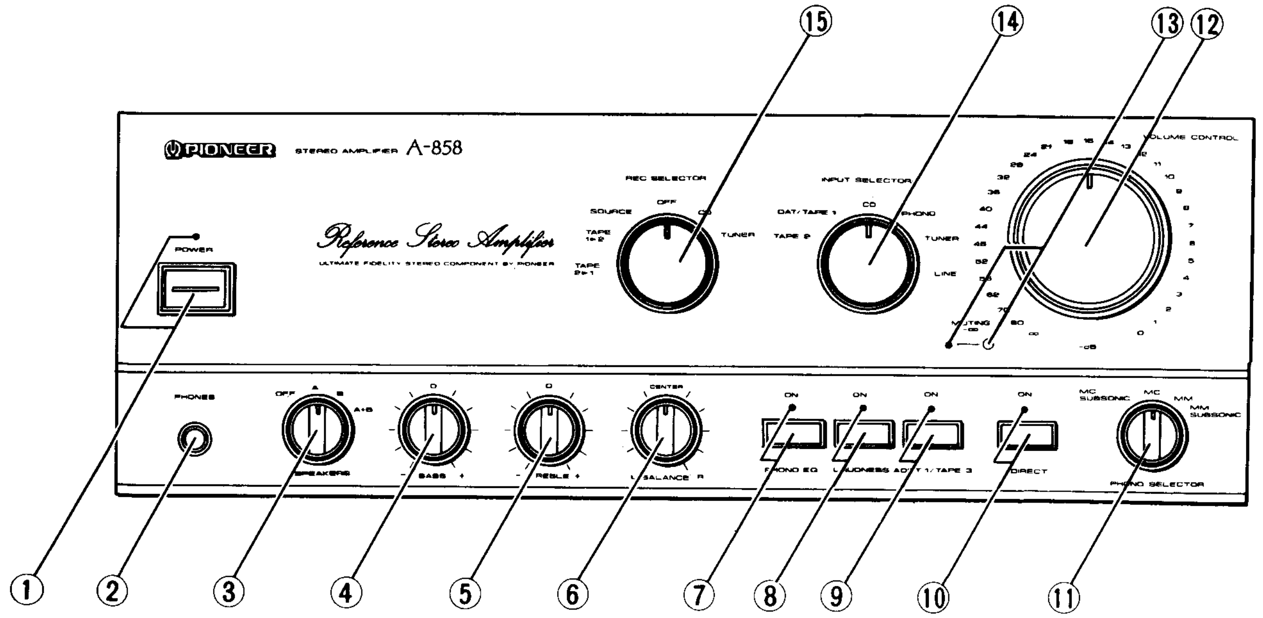
Be sure to place the unit on a level surface so that it stands firmly on all its feet. If wobbly, adjust by attaching the supplied cushion spacers to one or more feet.



MAINTENANCE OF EXTERNAL SURFACES

- Use a polishing cloth or dry cloth to wipe off dust and dirt.
- When the surfaces are very dirty, wipe with a soft cloth dipped in some neutral cleanser diluted five or six times with water, and wrung out well, and then wipe again with a dry cloth. Do not use furniture wax or cleaners.
- Never use thinners, benzine, insecticide sprays and other chemicals on or near this unit, since these will corrode the surfaces.

5. PANEL FACILITIES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⑫
PIONEER
STEREO AMPLIFIER A-858
Reference Stereo Amplifier
ULTIMATE FIDELITY STEREO COMPONENT BY PIONEER
POWER
REC SELECTOR
SOURCE
OFF
CD
TAPE 1▸2
TUNER
TAPE 2▸1
INPUT SELECTOR
DAT/TAPE 1
CD
PHONO
TAPE 2
TUNER
LINE
VOLUME CONTROL
MUTING
-∞
-dB
PHONES
OFF
A
B
A+B
SPEAKERS
0
BASS
0
TREBLE
CENTER
L BALANCE R
ON
PHONO EQ
ON
LOUDNESS
ON
ADPT 1/TAPE 3
ON
DIRECT
MC SUBSONIC
MC
MM
MM SUBSONIC
PHONO SELECTOR
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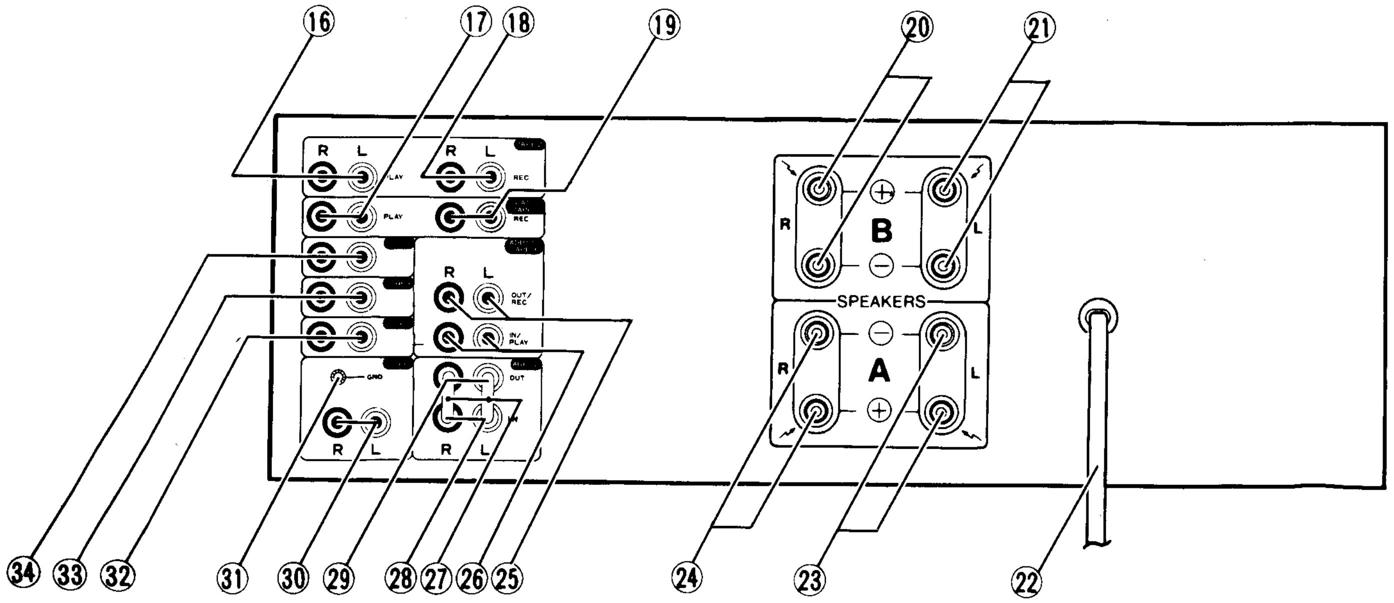
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R
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PLAY
R
L
REC
PLAY
REC
R
L
OUT/REC
IN/PLAY
GND
OUT
IN
R
L
R
L
B
R
L
SPEAKERS
A
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[FRONT PANEL]

① POWER switch/indicator

Press to turn power to the unit ON and OFF.
When the power is ON, indicator lights.

② PHONES jack

When using headphones, insert the plug into this jack.

③ SPEAKERS selector switch

Use this switch to listen to the speaker systems connected to the SPEAKERS terminals.

OFF:

Released position: No sound is heard from the speaker system.
Set to this position when listening with headphones.

A:

For reproduction of sound with the speaker systems connected to the SPEAKERS A terminals.

B:

For reproduction of sound with the speaker systems connected to the SPEAKERS B terminals.

A + B:

For reproduction of sound with the speaker systems connected to SPEAKERS A and B terminals.

④ BASS tone control

Use to adjust the low-frequency tone at low volume level. The center position is the flat (normal) position. When turned to the right, low-frequency tones are emphasized; when turned to the left, low-frequency tones are de-emphasized.

NOTE:
This function does not operate when the DIRECT switch is in the ON position.

⑤ TREBLE tone control

Use to adjust the high-frequency tone at low volume level.
The center position is the flat (normal) position. When turned to the right, high-frequency tones are emphasized; when turned to the left, high-frequency tones are de-emphasized.

NOTE:
This function does not operate when the DIRECT switch is in the ON position.

⑥ BALANCE control

Should normally be left in the center position. Adjust balance if the sound is louder from one of the speakers. If the right side is louder, turn toward the LEFT position and if the left side is louder, turn toward the RIGHT position.

NOTE:
This function does not operate when the DIRECT switch is in the ON position.

⑦ PHONO EQ switch/indicator

When not using a phono input, turn the phono equalizer power circuit off in order to prevent it from collecting noise during playback of other sources.

ON:

The indicator lights: Always set to this position when using a phono input. Immediately after turning ON, audio signal will be muted for several seconds until circuit operation becomes stable.

OFF:

The indicator goes off: Set to this position when not using a phono input.

⑧ LOUDNESS switch/indicator

Use when listening at low volume levels.

ON:

The indicator lights: Boosts low and high frequencies to give added punch to playback even at low-volume.

OFF:

The indicator goes off: Should normally be left in this position.

NOTE:
This switch does not operate when the DIRECT switch is in the ON position.

⑨ ADPT 1/TAPE 3 switch/indicator

Use this switch to listen to tape playback, or to listen to the sounds being recorded during tape recording.

ON:

The indicator lights: Press when listening to the playback sound of the tape deck or the adaptor connected to the ADPT 1/TAPE 3 IN/PLAY terminals, or to monitor the sound being recorded on the tape deck connected to the ADPT 1/TAPE 3 OUT/REC terminals.

OFF:

The indicator goes off: Normally leave the switch in this position.

NOTE:
When the DIRECT switch is set to ON, this function does not operate and no signal is output at the ADPT 1/TAPE 3 OUT/REC terminals.

⑩ DIRECT switch/indicator

Use this switch when you do not wish to pass the output from input terminal equipment through the various frequency adjusting circuits and adaptor terminals (ADPT 1/TAPE 3, ADPT 2, BASS, TREBLE, BALANCE, LOUDNESS).

ON:

When the switch is in this position, the indicator lights and the signals input from the input terminals are reproduced without passing through the various frequency-adjusting circuits. This results in flat, pure sound which is a more faithful reproduction of the input source.

OFF:

When the switch is in this position the indicator goes out and the signal passes through the various frequency adjusting circuits.

⑪ PHONO SELECTOR switch

Set in accordance with the type of cartridge used in you turntable.

MM:

Set to this position when using a moving magnet cartridge, or a MC (moving coil) cartridge with high output of 1 mV or more.

MC:

Set to this position when using a moving coil cartridge.

MM SUBSONIC/MC SUBSONIC:

Subsonic filter for moving coil or moving magnet cartridges to cut ultralow frequency noise less than 17 Hz generated when playing a warped record.

When using a high-output moving coil cartridge, set this switch to MM or MM SUBSONIC.

⑫ VOLUME CONTROL

Use to adjust volume level.

NOTE:
This unit is equipped with a circuit that attenuates the effect of tone and loudness controls at volume is turned up.

⑬ MUTING switch/indicator

Use to temporarily cut sound volume.

ON:

The indicator lights. The sound volume will be cut off.

OFF:

The indicator goes off. The sound will return to its previous volume.

⑭ INPUT SELECTOR switch

Use to select playback source.

LINE:

Set to this position when listening to the programs from a component connected to the LINE terminals.

TUNER:

Set to this position when listening to AM or FM broadcasts with a tuner.

PHONO:

Set to this position when listening to record playback on a turntable.

CD:

Set to this position when listening to a compact disc playback with a CD player.

DAT/TAPE 1:

For playback with a tape deck or digital audio tape deck connected to the DAT/TAPE 1 terminals.

TAPE 2:

For playback with a tape deck connected to the TAPE 2 terminals.

⑮ REC SELECTOR switch

Switch to select recording signal. When set at other than SOURCE or OFF position, signals can be recorded during playback of the equipment selected by INPUT SELECTOR switch.

TUNER:

To record from a TUNER.

CD:

To record from a CD player.

OFF:

In this position nothing from the REC terminals of DAT/TAPE 1 and TAPE 2 will be output. Select it when not recording; output to tape decks will be disconnected, improving sound quality.

SOURCE:

To record the equipment selected by INPUT SELECTOR switch.

TAPE:

1 ▶ 2

To record (copy) from the tape deck of DAT/TAPE 1 terminals, over to the tape deck of TAPE 2 terminals.

2 ▶ 1

To record (copy) from the tape deck of TAPE 2 terminals, over to the tape deck of DAT/TAPE 1 terminals.

NOTE:
The REC SELECTOR switch has no effect on the recording out put of the ADPT 1/TAPE 3 terminals.

[REAR PANEL]

⑯ TAPE 2 PLAY terminals.
⑰ DAT/TAPE 1 PLAY terminals.
⑱ TAPE 2 REC terminals.
⑲ DAT/TAPE 1 REC terminals.
⑳ SPEAKERS B terminals (right channel).
㉑ SPEAKERS B terminals (left channel).
㉒ Power cord.

Connect this cord to an AC wall socket, or the AC outlet of an audio timer.

㉓ SPEAKERS A terminals (left channel).
㉔ SPEAKERS A terminals (right channel).
㉕ ADPT 1/TAPE 3 OUT/REC terminals.
㉖ ADPT 1/TAPE 3 IN/PLAY terminals.
㉗ Shorting bars.
㉘ ADPT 2 IN terminals.
㉙ ADPT 2 OUT terminals.
㉚ PHONO terminals.
㉛ Turntable ground terminal (GND).
㉜ LINE terminals.
㉝ TUNER terminals.
㉞ CD terminals.